Marconi

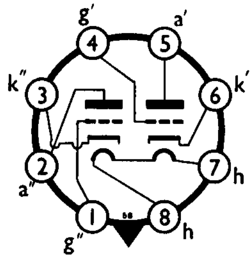
DOUBLE TRIODES
INDIRECTLY HEATED

B36
B65

AUGUST, 1953

The B36 and B65 are identical apart from their heater ratings.

BASE CONNECTIONS AND VALVE DIMENSIONS



View from underside of base.

Base : International octal.
Bulb : Tubular.

Overall length :	81—91	mm.
Seated length :	67—77	mm.
Max. dia.	34	mm.

RATING

	B36			B65	
V_h	12·6			6·3	V
I_h	0·3			0·6	A
$V_{h\text{-}k}$		150	max.		V
Per system					
V_a		300	max.		V
V_g for cut-off ($I_a = 10\ \mu A$)		−17	approx.		V
p_a		2·5	max.		W
μ (at $V_a = 250$ $V_g = -8$)		20			
r_a (at $V_a = 250$ $V_g = -8$)		7·7			kΩ
g_m (at $V_a = 250$ $V_g = -8$)		2·6			mA/V

CAPACITANCES (of cold unscreened valve)

$c_{a'\text{-}g'}$	4·5	pF	$c_{a''\text{-}g''}$	4·5	pF
$c_{g'\text{-}k'}$	3·5	pF	$c_{g''\text{-}k''}$	3·7	pF
$c_{a'\text{-}k'}$	1·5	pF	$c_{a''\text{-}k''}$	1·2	pF
$c_{a'\text{-}a''}$	1·0	pF			

TYPICAL OPERATION

A.F. Amplifier. Class A.

Per system.

$V_a(b)$	250	250	V
V_g	−1·46	−2·52	V
v_{out}	18·5	32	V
V_{gain}	16	15·5	
I_a	6·65	5·75	mA
R_k	220	440	Ω
R_a	22	22	kΩ
D	1	2	%

MARCONI'S WIRELESS TELEGRAPH COMPANY LIMITED

Head Office: Marconi House, Chelmsford . Telephone: Chelmsford 3221 . Telegraphic Address: Expanse, Chelmsford

GRID RESISTOR

Under maximum rated conditions the grid-cathode D.C. resistance must not exceed 1 MΩ per system.

MOUNTING

Any position.

RETAINING

No retaining device is normally necessary.

SCREENING

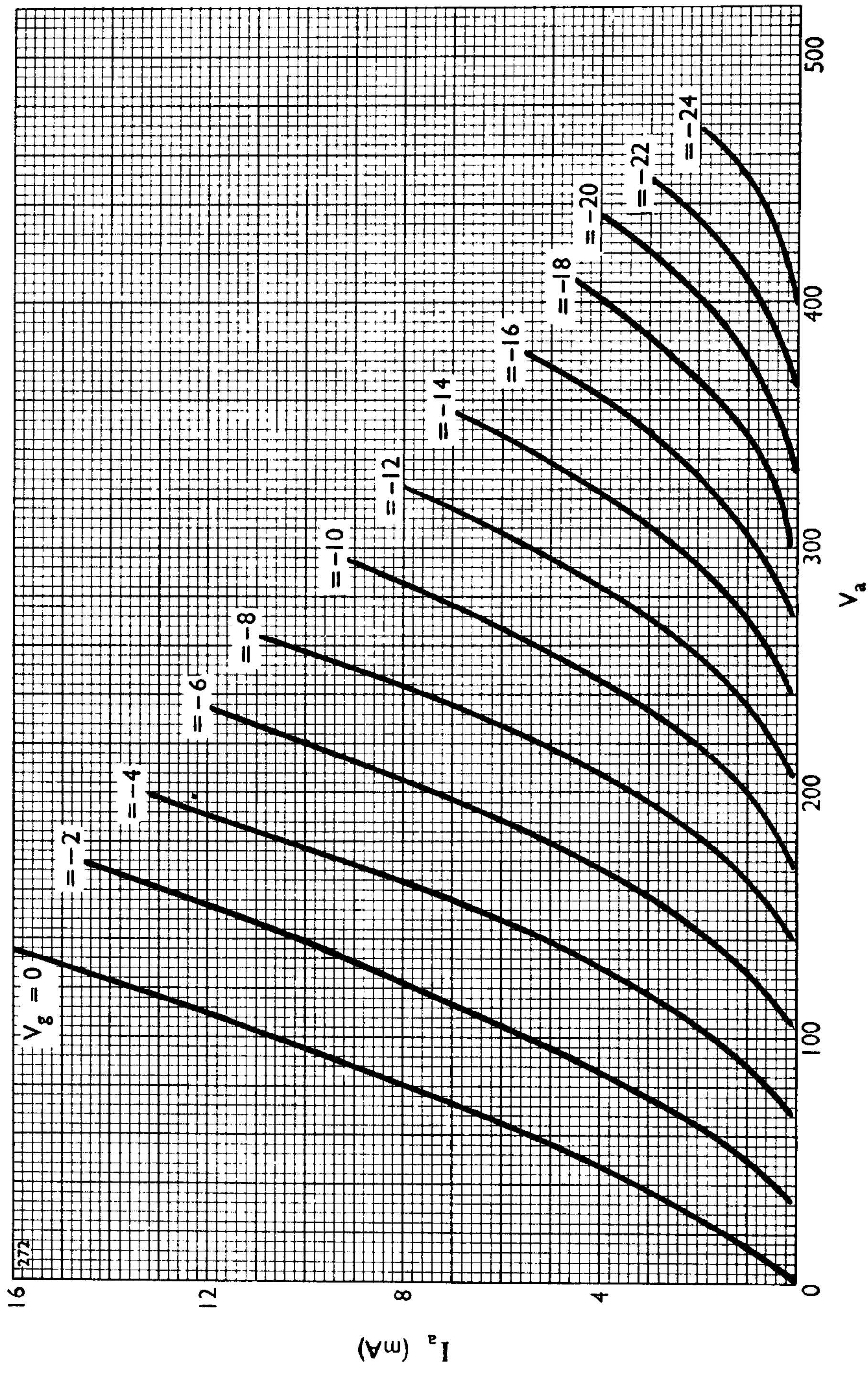
No internal or external screening is fitted to the valve. The use of an external screening can is not normally necessary.

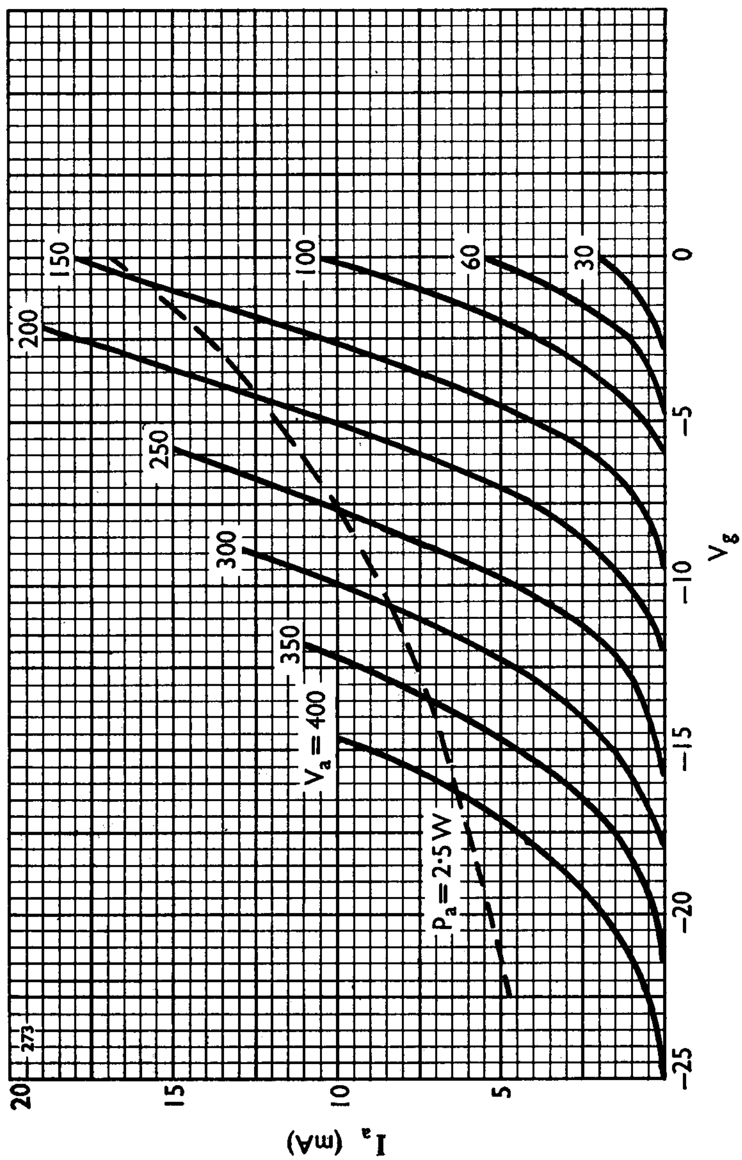
VENTILATION

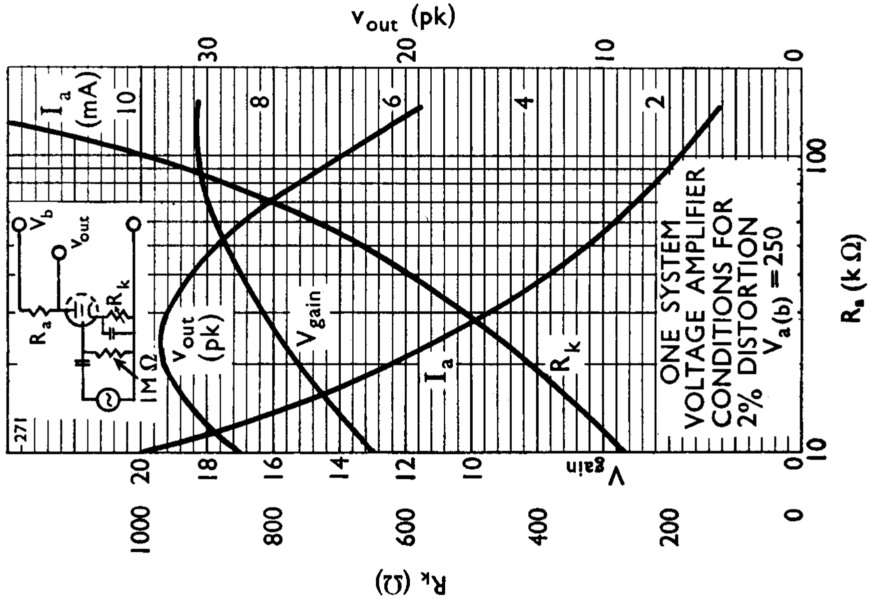
No special precautions are necessary.

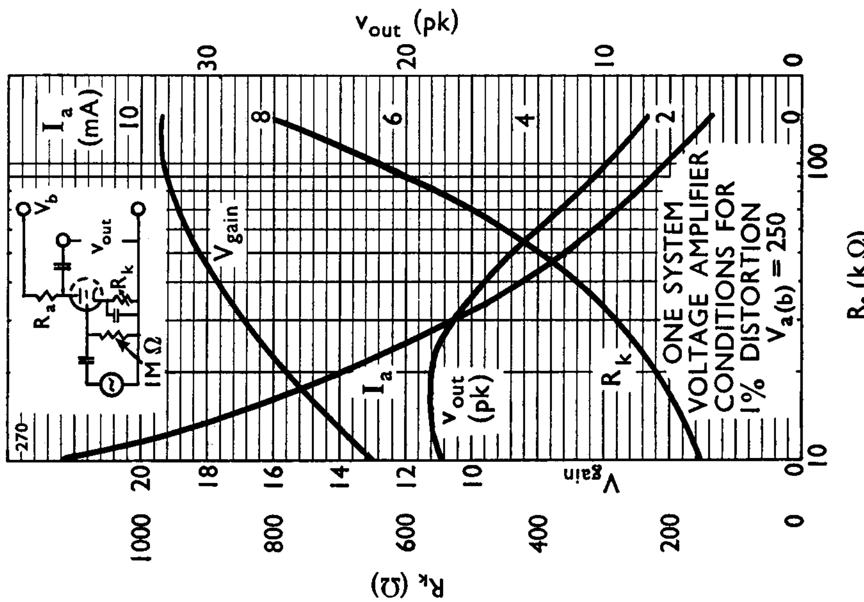
MICROPHONY

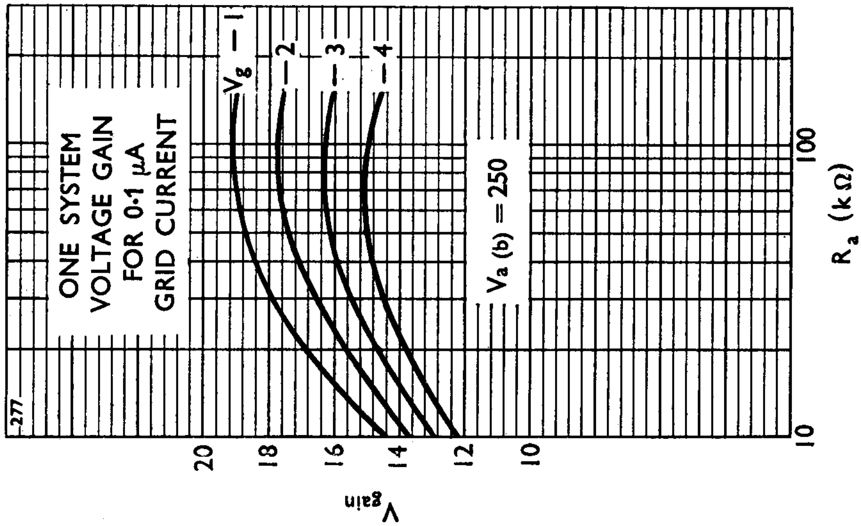
The valve is free from microphony in normal receiving applications.

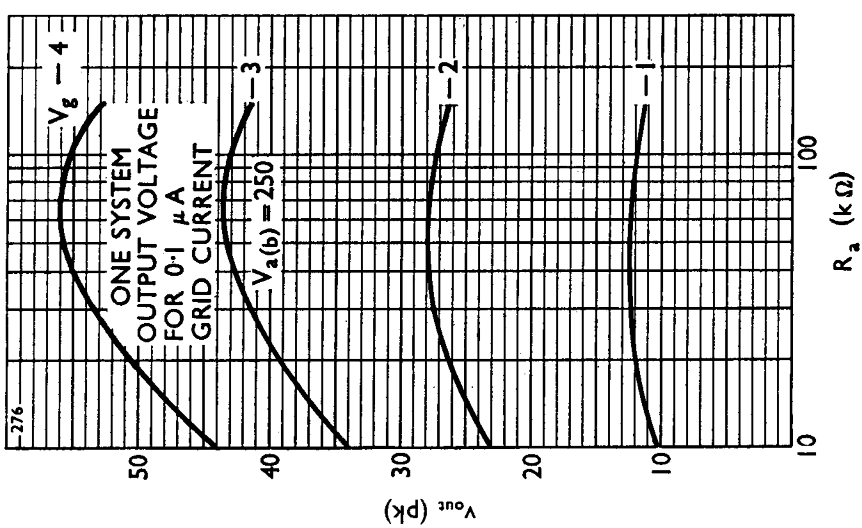

272
$V_g = 0$
= −2
= −4
= −6
= −8
= −10
= −12
= −14
= −16
= −18
= −20
= −22
= −24
I_a (mA)
16
12
8
4
0
100
200
300
400
500
V_a

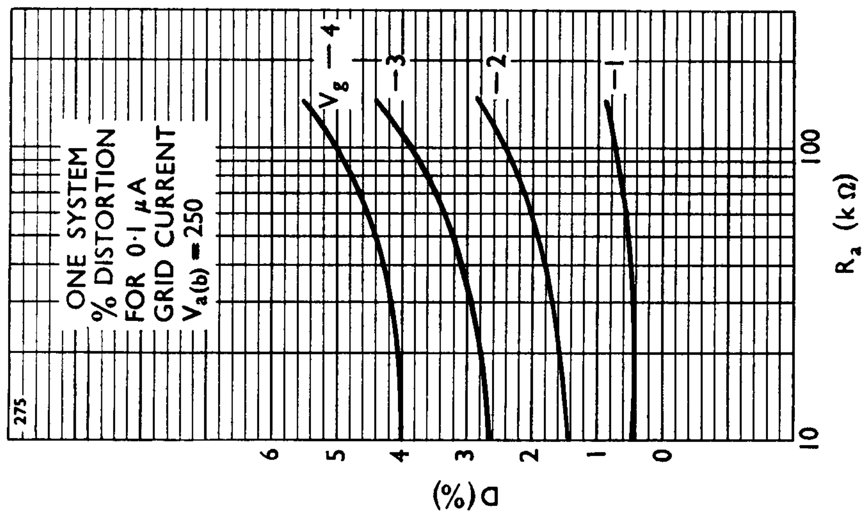

$V_a = 400$
350
300
250
200
150
100
60
30
$P_a = 2{\cdot}5$ W
V_g
I_a (mA)
0
−5
−10
−15
−20
−25
20
15
10
5
273


271
ONE SYSTEM
VOLTAGE AMPLIFIER
CONDITIONS FOR
2% DISTORTION
$V_{a(b)} = 250$
v_{out} (pk)
V_{gain}
I_a
R_k
I_a (mA)
R_a (k Ω)
R_k (Ω)
1MΩ
V_b
v_{out}
R_a
R_k

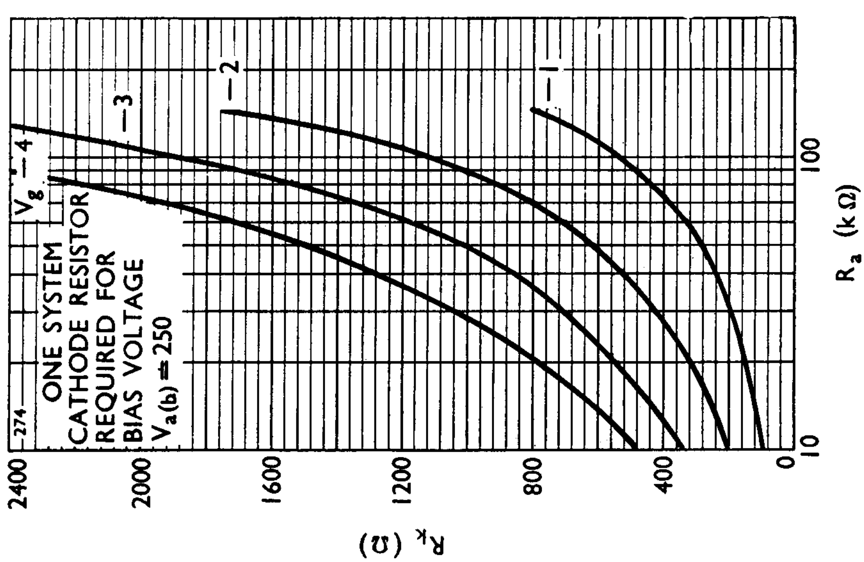

270
ONE SYSTEM
VOLTAGE AMPLIFIER
CONDITIONS FOR
1% DISTORTION
$V_{a(b)} = 250$
v_{out} (pk)
V_{gain}
I_a
R_k
I_a (mA)
R_a (k Ω)
R_k (Ω)
1MΩ
V_b
v_{out}
R_a
R_k


ONE SYSTEM
VOLTAGE GAIN
FOR 0·1 μA
GRID CURRENT
Va (b) = 250
Vg — 1
— 2
— 3
— 4
277
20
18
16
14
12
10
Vgain
10
100
Ra (k Ω)


ONE SYSTEM
OUTPUT VOLTAGE
FOR 0·1 μA
GRID CURRENT
Va(b) = 250
Vg — 4
— 3
— 2
— 1
276
50
40
30
20
10
Vout (pk)
10
100
Ra (k Ω)



275
ONE SYSTEM
% DISTORTION
FOR 0·1 μA
GRID CURRENT
Va(b) = 250
Vg —4
—3
—2
—1
D(%)
0
1
2
3
4
5
6
10
100
Ra (kΩ)



274
ONE SYSTEM
CATHODE RESISTOR
REQUIRED FOR
BIAS VOLTAGE
Va(b) = 250
Vg —4
—3
—2
—1
Rk (Ω)
0
400
800
1200
1600
2000
2400
10
100
Ra (kΩ)

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